New England Bioassay
A Division of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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NEW ENGLAND BIOASSAY A DIVISION OF GZA
CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee: Patriot Beverages NPDES # MA0004936
Report submitted to: 20 Harvard Road
Littleton, MA 01460
Sample ID: Effluent
Test Month/Year: July 2019
NEB Proj # 05.0044697.00

Test Type / Method: *Pimephales promelas* Modified Chronic Static-Renewal Freshwater Test Method 1000.0; EPA 821-R-02-013

Effluent Sample Dates: #1 7/7-8/19 #2 7/9-10/19 #3 7/11-12/19

Test Start Date: 7/8/19

Results Summary

Your results were as follows:

Passed all permit limits

Acute Test Results

Species	LC50	A-NOEC	Permit Limit	Pass / Fail
Pimephales promelas	>100%	100%	≥ 100%	Pass

Chronic Test Results

Species	C-NOEC	C-LOEC	IC25	Permit Limit	Pass/Fail
Pimephales promelas	100%	>100%	>100%	≥ 91%	Pass

Data Qualifiers affecting this test:

This test had an anomalous result. See "Results Discussion" on Pimephales promelas Test Results page for explanation.

Certifications & Approvals: NH ELAP (2071), NJ DEP (CT405)

Test Report Certification

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Effluent Test Start Date: 7/8/19

Whole Effluent Toxicity Test Report Certification (Permittee)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: _____ _____

(Date) Authorized Signature

_____

Print or Type Name and Title

_____

Print or Type the Permittee's Name

MA0004936

Print or Type the NPDES Permit Number

Whole Effluent Toxicity Test Report Certification (Bioassay Laboratory)

The results reported relate only to the samples submitted as received

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 8/6/19 _____

(Date)

Kimberly Wills

Laboratory Manager

New England Bioassay a division of GZA

General Test Conditions

Permittee name: Patriot Beverages | Permit number: MA0004936

Client sample ID: Effluent | Test Start Date: 7/8/19

Sample Collection Information

Effluent #1 Dates/Times: 7/7-8/19 @ 0800-0800 Receiving Water #1 Date/Time: 7/8/19 @ 0730

Effluent #2 Dates/Times: 7/9-10/19 @ 0800-0800 Receiving Water #2 Date/Time: 7/10/19 @ 0730

Effluent #3 Dates/Times: 7/11-12/19 @ 0700-0700 Receiving Water #3 Date/Time: 7/12/19 @ 0800

Were a minimum of three samples collected? Yes ☑ No ☐ *(see note below)

Were samples used within the first 36 hours of collection? Yes ☑ No ☐ * (see note below)

* sample collection note:

Test Conditions

Permittee's Receiving Water: Reedy Meadow Brook

- Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)
- Control water Receiving water collected at a point immediately upstream of or away from the discharge

Effluent concentrations tested: 0%, 6.25%, 12.5%, 25%, 50%, 91%, 100%

Was effluent salinity adjusted? No ☑ Yes ☐ with Instant Ocean sea salts to _____ ppt

Dechlorination procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method

- Dechlorination was not required

Aeration: Did Dissolved Oxygen levels fall below 40% saturation? Yes ☐ No ☑

Test Aerated at <100 bubbles/minute as of: N/A

TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"

Reference Toxicant Data

Fathead minnows

Date:	7/1/19
Toxicant:	Sodium chloride
Dilution Water:	NEB Soft Water
Organism Source:	NEB
Growth IC25:	1.52 g/L
Results within range	Yes ☑ No ☐

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number MA0004936

Client sample ID: Effluent Test Dates: 7/8/19 - 7/15/19

Test Acceptability Criteria

Lab Diluent Survival:	97.5	%	Mean Lab Diluent Growth:	0.62	mg
Brook Control Survival:	85	%	Mean Brook Control Growth:	0.55	mg
Thiosulfate Control Survival:	N/A	%	Mean Thiosulfate Control Growth:	N/A	mg

Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Results

		Permit Limit	Test Result	Pass/Fail Status
Acute Data	48 hr LC50	≥ 100%	>100%	Pass
	48 hr NOEC		100%	
	TUa			
Chronic Data	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
	Growth C-LOEC		>100%	
	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability

Growth PMSD: 14.2 Upper & Lower EPA bounds: 12 - 30% ☐ Low ☑ Within bounds ☐ High

☐ PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC)

☑ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.

☐ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent difference (RPD) between the control and each treatment was calculated and compared to the lower bound.

- ☐ The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
- ☐ Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
- ☐ No statistically significant reductions were observed in this test.

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Effluent Test Dates: 7/8/19 - 7/15/19

Concentration - Response Evaluation

Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.

Growth: #5 The concentration - response relationship observed in this data set corresponds to the following item number in Chapter Four of "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000: #5 Interrupted concentration-response: significant effects bracketed by non-significant effects.

The concentration - response relationship was reviewed and the following determination was made:

Survival	Growth	
X		Results are reliable and reportable
	X	Results are anomalous (see explanation below)
		Results are inconclusive - retest (see explanation below)

Results Discussion (if applicable):

Please note that a significant decrease in growth was observed in the 50% effluent concentration. Such an effect was not observed any other effluent test concentrations. Significant mortalities were not observed in any concentration. Due to this unusual concentration-response relationship, the guidelines indicated in "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000 were consulted. The concentration-response relationship observed in this test for reproduction resembles the relationship described in part 5 of Chapter 4 where significant effects were bracketed by non-significant effects. This guidance document recommended that in such a case the significantly different treatment is likely the result of a Type I error and it should be considered anomalous and the NOEC should be determined as the highest concentration that was not significantly different from the control. We have reported the C-NOEC as 100%, per the recommendations in this guidance document.

TEST METHODS

Pimephales promelas

Test type:	Modified Chronic Static Renewal Freshwater Test
Test Reference Manual:	EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms"
Test Method:	*Pimephales promelas* Survival and Growth Test - EPA 1000.0
Temperature:	25 ˚C ± 1˚C (Temperatures should not deviate by more than 3˚C during the test) (required)
Light Quality:	Ambient Laboratory Illumination (recommended)
Light Intensity:	10-20 µE/m2/s, or 50-100 ft-c (recommended)
Photoperiod:	16 hours light, 8 hours dark (recommended)
Test chamber size:	600 mL (500 mL is recommended minimum)
Test solution volume:	250 mL (recommended minimum)
Renewal of Test Solutions:	Daily (required)
Age of Test Organisms:	Newly hatched larvae less than 24 hours old (required)
Number of Organisms Per Test Chamber:	10 (recommended)
Number of Replicate Test Chambers Per Treatment:	4 (required minimum)
Number of Organisms Per Test Concentration:	40 (required minimum)
Feeding Regime:	Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient *Artemia* are added to provide an excess.
Cleaning:	Siphoned daily, immediately before test solution renewal (required)
Aeration:	None, unless DO concentration falls below 4.0 mg/L, at which point the rate should not exceed 100 bubbles/minute. (recommended)
Test Duration:	7 days (required)
Endpoints:	Survival and growth (weight) (required)
Test Acceptability:	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg (required)
Sampling Requirements:	Minimum of three samples with a maximum holding time of 36 hours before first use. (required)
Sample volume required:	2.5 L/Day (recommended)

PIMEPHALES PROMELAS
DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM
CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	*P.promelas* TEST ID #	19-891
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C39-2529/30
	Littleton, MA 01460	NEB PROJECT #	05.0044697.00
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Effluent
PERMIT NUMBER:	MA0004936		
DILUTION WATER:	Soft Synthetic Lab Water		

VERTEBRATES

TEST SET-UP TECHNICIAN:	LS
TEST SPECIES:	*Pimephales promelas*
NEB LOT #	Pp19(7-8)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C39-S015	50	35

	DATE	TIME
TEST START:	7/8/19	1525
TEST END:	7/15/19	1336

COMMENTS: _____

REVIEWED BY: _____ DATE: 8/6/19

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-891	COC #	C39-2529/30
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(7-8)
START DATE:	7/8/19	TIME:	1525	END DATE:	7/15/19	TIME:	1336

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	LS	AS	LS	DB	DB	BA	BA	LS	
NEB Lab Synthetic Diluent	A	10	10	10	10	9	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
Reedy Meadow Brook Control	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	9	5	4	4	4	
	D	10	10	10	10	10	10	10	10	
6.25%	A	10	10	10	10	8	8	8	8	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	8	7	7	7	7	
	D	10	10	10	10	10	10	10	10	
12.5%	A	10	10	10	10	10	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	9	9	9	9	9	
25%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	9	9	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
50%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	9	9	8	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
91%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	9	9	

D.O. concentration fell below 4.0 mg/L, all concentrations were aerated at <100 bubbles/minute as of: _____

_____

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-891	COC #	C39-2529/30
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(7-8)
START DATE:	7/8/19	TIME: 1525	END DATE:	7/15/19	TIME: 1336

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	LS	AS	LS	DB	DB	BA	BA	LS	
100%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460		
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	19-891
TEST START DATE	7/8/19	WEIGHING DATE:	7/22/19
TEST END DATE	7/15/19		
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	LS	ANALYST-FINAL WEIGHTS	DB

Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
NEB Lab Synthetic Diluent	A	923.54	929.97
	B	928.02	934.20
	C	933.71	939.55
	D	937.46	943.80
Reedy Meadow Brook Control	A	928.70	934.92
	B	930.06	936.41
	C	922.81	926.55
	D	930.35	936.04
6.25%	A	930.19	935.29
	B	925.82	930.98
	C	936.03	941.99
	D	929.02	934.26
12.5%	A	926.49	932.47
	B	933.84	939.56
	C	932.35	939.41
	D	933.77	940.34
25%	A	926.17	931.74
	B	924.95	929.66
	C	923.58	929.93
	D	925.51	931.53
50%	A	927.61	932.33
	B	928.15	932.49
	C	929.31	935.05
	D	932.14	937.74
91%	A	925.20	930.86
	B	932.35	938.15
	C	928.26	934.88
	D	927.34	932.98
100%	A	929.64	935.37
	B	928.97	934.64
	C	933.28	938.90
	D	924.46	930.55

Concentration	Rep	Final Weight (mg)	Initial Weight (mg)	Total Weight (mg)	Average per fish (mg)	Mean fish weight (mg)	Standard Deviation
NEB Lab Synthetic Diluent	1	929.97	923.54	6.43	0.643	0.6197	0.025979158
	2	934.20	928.02	6.18	0.618		
	3	939.55	933.71	5.84	0.584		
	4	943.80	937.46	6.34	0.634		
Reedy Meadow Brook Control	1	934.92	928.70	6.22	0.622	0.5500	0.120755952
	2	936.41	930.06	6.35	0.635		
	3	926.55	922.81	3.74	0.374		
	4	936.04	930.35	5.69	0.569		
6.25%	1	935.29	930.19	5.10	0.510	0.5365	0.040079088
	2	930.98	925.82	5.16	0.516		
	3	941.99	936.03	5.96	0.596		
	4	934.26	929.02	5.24	0.524		
12.5%	1	932.47	926.49	5.98	0.598	0.6332	0.060140807
	2	939.56	933.84	5.72	0.572		
	3	939.41	932.35	7.06	0.706		
	4	940.34	933.77	6.57	0.657		
25%	1	931.74	926.17	5.57	0.557	0.5662	0.071093249
	2	929.66	924.95	4.71	0.471		
	3	929.93	923.58	6.35	0.635		
	4	931.53	925.51	6.02	0.602		
50%	1	932.33	927.61	4.72	0.472	0.5100	0.067862606
	2	932.49	928.15	4.34	0.434		
	3	935.05	929.31	5.74	0.574		
	4	937.74	932.14	5.60	0.560		
91%	1	930.86	925.20	5.66	0.566	0.5930	0.046547467
	2	938.15	932.35	5.80	0.580		
	3	934.88	928.26	6.62	0.662		
	4	932.98	927.34	5.64	0.564		
100%	1	935.37	929.64	5.73	0.573	0.5777	0.021313141
	2	934.64	928.97	5.67	0.567		
	3	938.90	933.28	5.62	0.562		
	4	930.55	924.46	6.09	0.609		

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			7/8/19 TIME:	1525
ANALYST	LS	AS	AS	BA	DB	BA	BA	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.9	25.5	25.8	26.2	26.0	25.7	24.6	
D.O. mg/L Initial	8.1	8.2	8.3	8.1	7.9	8.1	8.1	
pH s.u. Initial	7.9	7.8	7.7	7.6	7.3	7.5	7.8	
Conductivity µS Initial	190	191	192	190	192	192	191	
Temp °C Final	24.8	25.2	25.6	25.6	25.0	25.2	25.1	
D.O. mg/L Final	7.5	7.3	7.1	6.6	6.9	7.0	6.9	
pH s.u. Final	7.3	7.4	7.5	7.5	7.4	7.2	7.1	
Conductivity µS Final	199	201	193	193	196	196	198	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.9	24.3	25.3	27.3	25.1	26.4	26.0	
D.O. mg/L Initial	6.4	7.9	6.0	7.4	9.8	8.6	8.2	
pH s.u. Initial	7.2	7.1	7.1	7.4	6.8	7.2	7.5	
Conductivity µS Initial	332	333	304	302	286	286	284	
Temp °C Final	24.8	25.2	25.6	25.6	25.3	25.4	25.2	
D.O. mg/L Final	6.9	6.5	6.4	6.2	6.5	6.6	6.3	
pH s.u. Final	7.1	7.2	7.3	7.5	6.8	6.8	6.9	
Conductivity µS Final	334	335	307	303	295	290	290	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.9	25.5	25.7	26.1	26.0	25.8	24.7	
D.O. mg/L Initial	8.1	8.2	8.1	8.1	8.0	8.1	8.1	
pH s.u. Initial	8.1	8.1	8.0	8.3	8.0	8.2	8.2	
Conductivity µS Initial	342	330	329	325	329	333	327	
Temp °C Final	24.7	25.2	25.6	25.6	25.4	25.5	25.5	
D.O. mg/L Final	7.4	7.0	7.0	6.5	7.2	7.3	7.0	
pH s.u. Final	8.0	7.9	7.9	7.7	7.7	7.8	7.7	
Conductivity µS Final	344	335	330	330	332	335	333	
12.5%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.9	25.5	25.9	26.2	26.1	25.8	24.6	
D.O. mg/L Initial	8.1	8.2	8.1	8.1	8.0	8.1	8.1	
pH s.u. Initial	8.3	8.4	8.3	8.5	8.2	8.4	8.4	
Conductivity µS Initial	471	470	465	457	466	473	480	
Temp °C Final	24.8	24.9	25.6	25.7	25.1	25.3	25.3	
D.O. mg/L Final	7.5	7.1	7.3	6.7	7.0	7.0	6.9	
pH s.u. Final	8.2	8.1	8.3	8.1	7.9	8.1	8.0	
Conductivity µS Final	472	461	466	462	471	479	491	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			7/8/19 TIME:	1525
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.8	25.5	25.9	26.2	25.9	25.6	24.8	
D.O. mg/L Initial	8.2	8.3	8.3	8.2	8.2	8.2	8.1	
pH s.u. Initial	8.4	8.5	8.5	8.5	8.3	8.5	8.5	
Conductivity µS Initial	736	734	742	729	776	753	746	
Temp °C Final	24.8	25.1	25.6	25.7	25.4	25.2	25.2	
D.O. mg/L Final	7.5	7.0	7.2	6.5	6.9	7.4	7.2	
pH s.u. Final	8.5	8.5	8.6	8.4	8.3	8.4	8.4	
Conductivity µS Final	741	759	744	735	767	763	764	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.6	25.5	25.7	26.3	25.5	25.7	25.3	
D.O. mg/L Initial	8.4	8.5	8.4	8.5	8.3	8.4	8.2	
pH s.u. Initial	8.5	8.5	8.5	8.6	8.4	8.5	8.6	
Conductivity µS Initial	1,273	1,288	1,283	1,296	1,306	1,300	1,323	
Temp °C Final	24.9	25.1	25.6	25.7	25.2	25.3	25.3	
D.O. mg/L Final	7.5	6.9	7.3	6.6	6.9	7.3	7.1	
pH s.u. Final	8.6	8.7	8.7	8.7	8.5	8.6	8.6	
Conductivity µS Final	1,240	1,289	1,287	1,292	1,312	1,315	1,339	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.3	25.4	25.8	26.5	24.8	25.7	25.3	
D.O. mg/L Initial	8.6	8.8	8.7	8.8	8.6	8.7	8.3	
pH s.u. Initial	8.5	8.5	8.5	8.6	8.4	8.5	8.6	
Conductivity µS Initial	2,111	2,113	2,140	2,158	2,174	2,139	2,145	
Temp °C Final	24.8	25.1	25.7	25.8	25.3	25.5	25.4	
D.O. mg/L Final	7.5	6.6	7.3	6.6	6.8	6.8	7.2	
pH s.u. Final	8.7	8.7	8.7	8.7	8.5	8.6	8.6	
Conductivity µS Final	2,069	2,085	2,114	2,121	2,140	2,113	2,125	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.2	25.3	25.4	26.5	24.6	25.6	25.9	
D.O. mg/L Initial	8.9	9.1	8.8	9.3	9.0	9.1	8.7	
pH s.u. Initial	8.5	8.5	8.5	8.5	8.4	8.5	8.5	
Conductivity µS Initial	2,298	2,308	2,339	2,341	2,361	2,365	2,360	
Temp °C Final	24.9	25.2	25.6	25.7	25.3	25.5	25.5	
D.O. mg/L Final	7.5	6.9	7.4	6.5	6.7	6.9	6.7	
pH s.u. Final	8.7	8.7	8.7	8.7	8.6	8.6	8.6	
Conductivity µS Final	2,206	2,281	2,307	2,305	2,321	2,331	2,326	

Table of Random Permutations of 16

P.promelas Test ID# 19-891

7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	13	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	13	4	3	10	4
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4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
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16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
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8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	6	4	11	2	11	3	7	11	16
11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
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16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
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7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
					rep	conc													
1	6	7	4	8	6	5	2	8	15	4	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	2	15	7	9	8	16	1	14	3
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13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
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2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
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8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	03-1361-9287	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	13-2086-0904	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	08 Jul-19 15:25	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-19 13:36	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5301-9469	**Code:**	687CF44D	**Project:**	
Sample Date:	08 Jul-19 08:00	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	08 Jul-19 13:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1049685	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

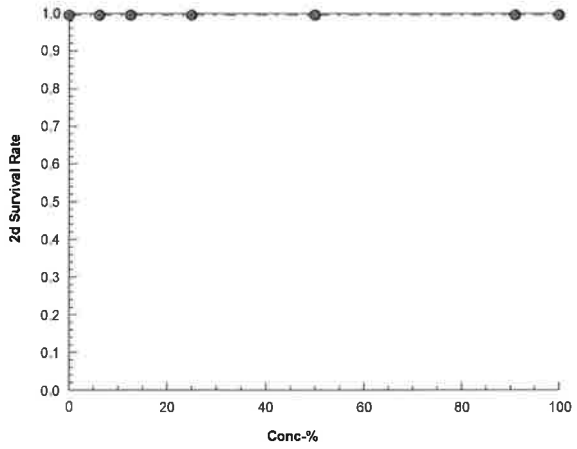
2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	03-1361-9287	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	13-9687-4574	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	13-2086-0904	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	08 Jul-19 15:25	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-19 13:36	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5301-9469	**Code:**	687CF44D	**Project:**	
Sample Date:	08 Jul-19 08:00	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	08 Jul-19 13:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1216541	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.975	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	0.9750	0.9000	1.0000	0.0500	5.13%	0.0%	39/40	0.975	0.0%
6.25		4	0.8750	0.7000	1.0000	0.1500	17.14%	10.26%	35/40	0.9625	1.28%
12.5		4	0.9500	0.9000	1.0000	0.0577	6.08%	2.56%	38/40	0.9625	1.28%
25		4	0.9750	0.9000	1.0000	0.0500	5.13%	0.0%	39/40	0.9625	1.28%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%	40/40	0.9625	1.28%
91		4	0.9750	0.9000	1.0000	0.0500	5.13%	0.0%	39/40	0.9625	1.28%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%	40/40	0.9625	1.28%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.9000	1.0000	1.0000	1.0000
6.25		0.8000	1.0000	0.7000	1.0000
12.5		0.9000	1.0000	1.0000	0.9000
25		1.0000	0.9000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	0.9000
100		1.0000	1.0000	1.0000	1.0000

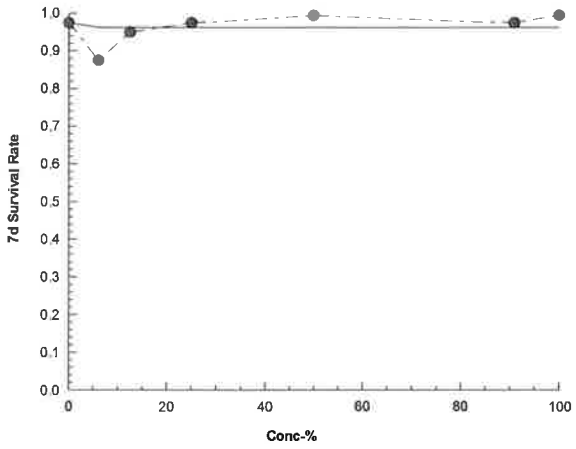
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	13-9687-4574	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:	12-8453-2864	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	13-2086-0904	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	08 Jul-19 15:25	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-19 13:36	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5301-9469	**Code:**	687CF44D	**Project:**	
Sample Date:	08 Jul-19 08:00	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	08 Jul-19 13:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	128760	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.6197	0.25	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Biomass-mg Summary

			Calculated Variate						Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	D	4	0.6197	0.584	0.643	0.02598	4.19%	0.0%	0.6197	0.0%
6.25		4	0.5365	0.51	0.596	0.04008	7.47%	13.43%	0.5849	5.63%
12.5		4	0.6332	0.572	0.706	0.06014	9.50%	-2.18%	0.5849	5.63%
25		4	0.5662	0.471	0.635	0.07109	12.56%	8.63%	0.5662	8.63%
50		4	0.51	0.434	0.574	0.06786	13.31%	17.71%	0.5602	9.6%
91		4	0.593	0.564	0.662	0.04655	7.85%	4.32%	0.5602	9.6%
100		4	0.5777	0.562	0.609	0.02131	3.69%	6.78%	0.5602	9.6%

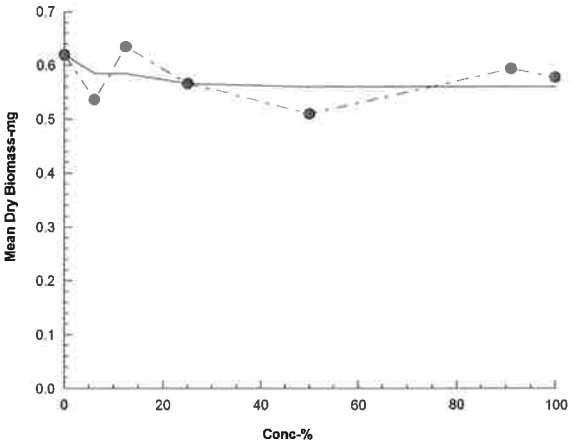
Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.643	0.618	0.584	0.634
6.25		0.51	0.516	0.596	0.524
12.5		0.598	0.572	0.706	0.657
25		0.557	0.471	0.635	0.602
50		0.472	0.434	0.574	0.56
91		0.566	0.58	0.662	0.564
100		0.573	0.567	0.562	0.609

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	12-8453-2864	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	07-1591-9441	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Batch ID:	13-2086-0904	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	08 Jul-19 15:25	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-19 13:36	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5301-9469	**Code:**	687CF44D	**Project:**	
Sample Date:	08 Jul-19 08:00	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	08 Jul-19 13:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	>100	n/a	1	11.45%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	15	10	1	6	Asymp	0.5108	Non-Significant Effect
		12.5	16	10	2	6	Asymp	0.6451	Non-Significant Effect
		25	18	10	2	6	Asymp	0.8571	Non-Significant Effect
		50	20	10	1	6	Asymp	0.9616	Non-Significant Effect
		91	18	10	2	6	Asymp	0.8571	Non-Significant Effect
		100	20	10	1	6	Asymp	0.9616	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.975	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0933851	0.0155642	6	1.455	0.2416	Non-Significant Effect
Error	0.224715	0.0107007	21			
Total	0.3181		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	14.42	3.812	1.7E-06	Unequal Variances
Variances	Mod Levene Equality of Variance Test	4.679	3.812	0.0036	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9082	0.8975	0.0179	Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	0.00%
6.25		4	0.8750	0.6363	1.0000	0.9000	0.7000	1.0000	0.0750	17.14%	10.26%
12.5		4	0.9500	0.8581	1.0000	0.9500	0.9000	1.0000	0.0289	6.08%	2.56%
25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%
91		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.00%
6.25		4	1.231	0.8888	1.572	1.26	0.9912	1.412	0.1074	17.45%	10.26%
12.5		4	1.331	1.181	1.48	1.331	1.249	1.412	0.04705	7.07%	2.97%
25		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.00%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.97%
91		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.00%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.97%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	07-1591-9441	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:59	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.9000	1.0000	1.0000	1.0000
6.25		0.8000	1.0000	0.7000	1.0000
12.5		0.9000	1.0000	1.0000	0.9000
25		1.0000	0.9000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	0.9000
100		1.0000	1.0000	1.0000	1.0000

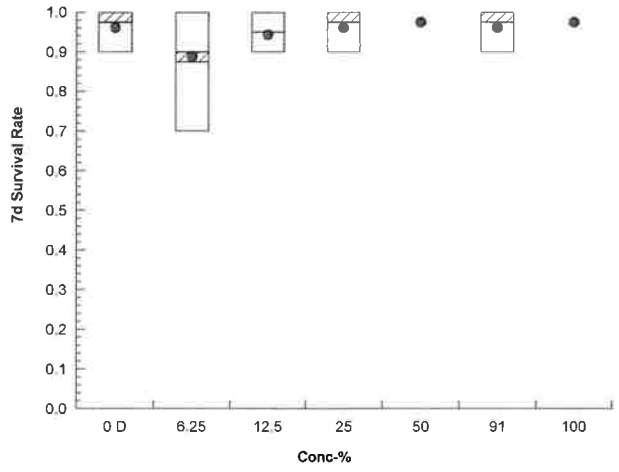
Angular (Corrected) Transformed Detail

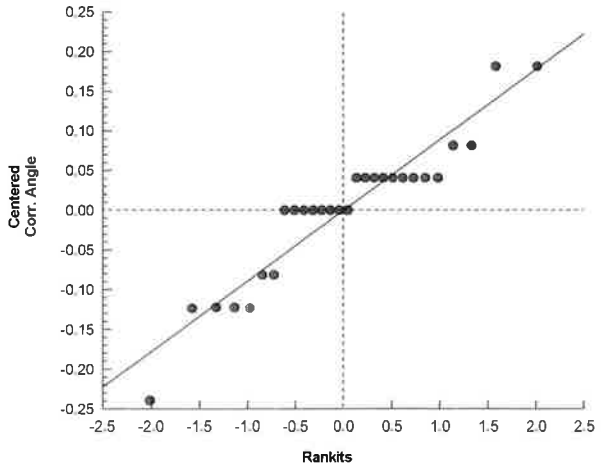
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.249	1.412	1.412	1.412
6.25		1.107	1.412	0.9912	1.412
12.5		1.249	1.412	1.412	1.249
25		1.412	1.249	1.412	1.412
50		1.412	1.412	1.412	1.412
91		1.412	1.412	1.412	1.249
100		1.412	1.412	1.412	1.412

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	9/10	10/10	10/10	10/10
6.25		8/10	10/10	7/10	10/10
12.5		9/10	10/10	10/10	9/10
25		10/10	9/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	9/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	20-0438-0801	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:58	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	13-2086-0904	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	08 Jul-19 15:25	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-19 13:36	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 22h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5301-9469	**Code:**	687CF44D	**Project:**	
Sample Date:	08 Jul-19 08:00	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	08 Jul-19 13:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	100	>100	n/a	1	14.23%

Dunnett Multiple Comparison Test

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water	6.25	2.31	2.448	0.088	6	CDF	0.0651	Non-Significant Effect
	12.5	-0.3747	2.448	0.088	6	CDF	0.9349	Non-Significant Effect
	25	1.485	2.448	0.088	6	CDF	0.2545	Non-Significant Effect
	50*	3.046	2.448	0.088	6	CDF	0.0145	Significant Effect
	91	0.7423	2.448	0.088	6	CDF	0.5729	Non-Significant Effect
	100	1.165	2.448	0.088	6	CDF	0.3802	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.6197	0.25	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0459685	0.0076614	6	2.95	0.0300	Significant Effect
Error	0.0545368	0.002597	21			
Total	0.100505		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	5.81	16.81	0.4448	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9588	0.8975	0.3268	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.6197	0.5784	0.6611	0.626	0.584	0.643	0.01299	4.19%	0.00%
6.25		4	0.5365	0.4727	0.6003	0.52	0.51	0.596	0.02004	7.47%	13.43%
12.5		4	0.6332	0.5375	0.7289	0.6275	0.572	0.706	0.03007	9.50%	-2.18%
25		4	0.5662	0.4531	0.6794	0.5795	0.471	0.635	0.03555	12.56%	8.63%
50		4	0.51	0.402	0.618	0.516	0.434	0.574	0.03393	13.31%	17.71%
91		4	0.593	0.5189	0.6671	0.573	0.564	0.662	0.02327	7.85%	4.32%
100		4	0.5777	0.5438	0.6117	0.57	0.562	0.609	0.01066	3.69%	6.78%

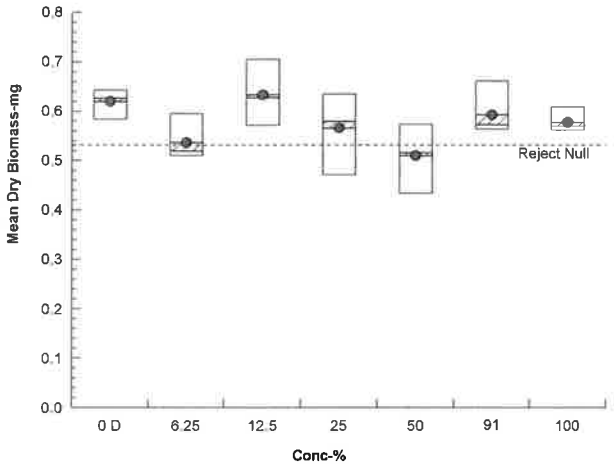
Mean Dry Biomass-mg Detail

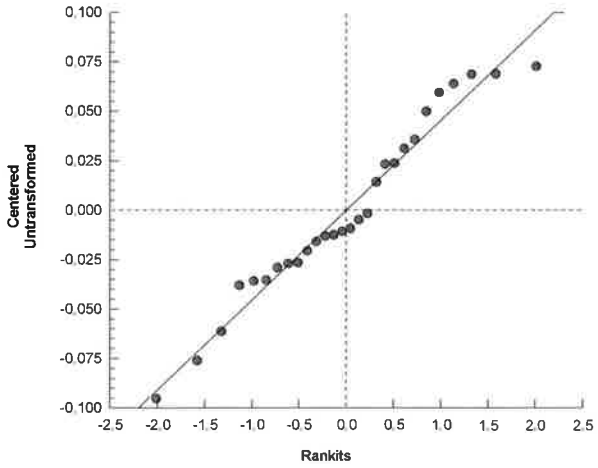
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.643	0.618	0.584	0.634
6.25		0.51	0.516	0.596	0.524
12.5		0.598	0.572	0.706	0.657
25		0.557	0.471	0.635	0.602
50		0.472	0.434	0.574	0.56
91		0.566	0.58	0.662	0.564
100		0.573	0.567	0.562	0.609

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	20-0438-0801	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	23 Jul-19 12:58	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

Graphics





CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.

PHOENIX
Environmental Laboratories, Inc.

Friday, July 12, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES MA
SDG ID: GCD51809
Sample ID#s: CD51809 - CD51812

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 12, 2019

SDG I.D.: GCD51809

Project ID: PATRIOT BEVERAGES MA

Client Id	Lab Id	Matrix
EFFLUENT #1 C39-2529	CD51809	WASTE WATER
REEDY MEADOW BROOK #1 C39-2530	CD51810	WASTE WATER
EFFLUENT GRAB #1	CD51811	WASTE WATER
SRCF LAB WATER	CD51812	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/08/19	8:00
Location Code:	NEB	Received by:	SW	07/08/19	15:26
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD51809
Phoenix ID: CD51809

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT #1 C39-2529

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.077	0.010	mg/L	1	07/10/19	CPP	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/19	RS	SM3113B
Copper	0.0011	0.0010	mg/L	1	07/10/19	CPP	E200.7
Hardness (CaCO3)	103	0.1	mg/L	1	07/10/19		E200.7
Nickel	0.009	0.001	mg/L	1	07/10/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	07/10/19	RS	SM3113B
Zinc	0.006	0.002	mg/L	1	07/10/19	CPP	E200.7
Alkalinity-CaCO3	980	5.00	mg/L	1	07/09/19	rwr/kdb	SM2320B-11
Conductivity	2170	5.00	umhos/cm	1	07/09/19	rwr/kdb	SM2510B-11
Ammonia as Nitrogen	0.12	0.05	mg/L	1	07/10/19	KDB	E350.1
Tot. Diss. Solids	1400	10	mg/L	1	07/09/19	BMD/BJA	SM2540C-11
Tot. Org. Carbon	8.39	0.50	mg/L	1	07/11/19	RWR	SM5310B-11
Total Solids	1400	10	mg/L	1	07/09/19	BMD/BJA	SM2540B-11
Total Metals Digestion	Completed				07/09/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/08/19	7:30
Location Code:	NEB	Received by:	SW	07/08/19	15:26
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD51809
Phoenix ID: CD51810

Project ID: PATRIOT BEVERAGES MA
Client ID: REEDY MEADOW BROOK #1 C39-2530

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.104	0.010	mg/L	1	07/10/19	CPP	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/19	RS	SM3113B
Copper	0.0048	0.0010	mg/L	1	07/10/19	CPP	E200.7
Hardness (CaCO3)	65.8	0.1	mg/L	1	07/10/19		E200.7
Nickel	0.006	0.001	mg/L	1	07/10/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	07/10/19	RS	SM3113B
Zinc	0.005	0.002	mg/L	1	07/10/19	CPP	E200.7
Alkalinity-CaCO3	61.9	5.00	mg/L	1	07/09/19	rwr/kdb	SM2320B-11
Conductivity	314	5.00	umhos/cm	1	07/09/19	rwr/kdb	SM2510B-11
Ammonia as Nitrogen	0.25	0.05	mg/L	1	07/10/19	KDB	E350.1
pH	7.18	1.00	pH Units	1	07/09/19 06:23	rwr/kdb	SM4500-H B-11
Tot. Org. Carbon	9.05	0.50	mg/L	1	07/11/19	RWR	SM5310B-11
Total Metals Digestion	Completed				07/09/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/08/19	8:00
Location Code:	NEB	Received by:	SW	07/08/19	15:26
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD51809
Phoenix ID: CD51811

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT GRAB #1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.04	0.02	mg/L	1	07/08/19 19:47	O	SM4500CLG-97
pH	8.61	1.00	pH Units	1	07/09/19 06:25	rwr/kdb	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/08/19	9:46
Location Code:	NEB	Received by:	SW	07/08/19	15:26
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD51809
Phoenix ID: CD51812

Project ID: PATRIOT BEVERAGES MA
Client ID: SRCF LAB WATER

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	< 0.010	0.010	mg/L	1	07/10/19	CPP	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/19	RS	SM3113B
Copper	0.0013	0.0010	mg/L	1	07/10/19	CPP	E200.7
Hardness (CaCO3)	49.0	0.1	mg/L	1	07/10/19		E200.7
Nickel	< 0.001	0.001	mg/L	1	07/10/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	07/10/19	RS	SM3113B
Zinc	0.002	0.002	mg/L	1	07/10/19	CPP	E200.7
Alkalinity-CaCO3	41.1	5.00	mg/L	1	07/09/19	rwr/kdb	SM2320B-11
Conductivity	186	5.00	umhos/cm	1	07/09/19	rwr/kdb	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	07/10/19	KDB	E350.1
pH	7.94	1.00	pH Units	1	07/09/19 06:30	rwr/kdb	SM4500-H B-11
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	07/11/19	RWR	SM5310B-11
Total Metals Digestion	Completed				07/09/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 12, 2019

QA/QC Data

SDG I.D.: GCD51809

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 486807 (mg/L), QC Sample No: CD51812 (CD51809, CD51810, CD51812)													
Cadmium - Water	BRL	0.0001	<0.0001	<0.0001	NC	106			111			75 - 125	20
QA/QC Batch 486807 (mg/L), QC Sample No: CD51812 (CD51809, CD51810, CD51812)													
Lead (Furnace) - Water	BRL	0.001	<0.0003	<0.001	NC	101			107			75 - 125	30
QA/QC Batch 486838 (mg/L), QC Sample No: CD51793 (CD51809, CD51810, CD51812)													
ICP Metals - Aqueous													
Aluminum	BRL	0.010	0.024	0.022	NC	99.6	99.3	0.3	112			75 - 125	20
Copper	BRL	0.0025	0.0014	<0.0025	NC	100	99.7	0.3	111			75 - 125	20
Nickel	BRL	0.0005	0.003	0.0026	NC	98.2	101	2.8	104			75 - 125	20
Zinc	BRL	0.0020	0.029	0.0287	1.00	96.2	100	3.9	105			75 - 125	20

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 12, 2019

QA/QC Data

SDG I.D.: GCD51809

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 486725 (mg/L), QC Sample No: CD51787 (CD51809)													
Tot. Diss. Solids	BRL	10	480	490	2.10	98.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 486738 (mg/L), QC Sample No: CD51789 (CD51809, CD51810, CD51812)													
Alkalinity-CaCO3	BRL	5.00	58	60	NC	103						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 486732 (pH), QC Sample No: CD51789 (CD51810, CD51811, CD51812)													
pH			7.42	7.48	0.80	98.8						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 486765 (mg/L), QC Sample No: CD51796 (CD51809)													
Total Solids	BRL	10	260	270	3.80	96.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 486748 (umhos/cm), QC Sample No: CD51799 (CD51809, CD51810, CD51812)													
Conductivity	BRL	5.00	806	806	0	99.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 487263 (mg/L), QC Sample No: CD52285 (CD51810, CD51812)													
Total Organic Carbon	BRL	1.0	1.9	1.9	NC	105			101			85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 486842 (mg/L), QC Sample No: CD51796 (CD51809, CD51810, CD51812)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	101			95.5			90 - 110	20
QA/QC Batch 486686 (mg/L), QC Sample No: CD51549 (CD51811)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	99.6							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
July 12, 2019

Friday, July 12, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCD51809 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

July 12, 2019 SDG I.D.: GCD51809

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Cooler: Yes ☒ No ☐
Coolant: IPK ☒ ICE ☐ No ☐
Temp 2.1°C Pg of

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☒ Email: Kimberly.wills@aqua.com

Customer: New England Biogassay
Address: 77 Batson Drive
Manchester CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O.: 22508

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia	pH	TRC	Hardness, alkalinity	Specific Conductance	Total solids	Total dissolved solids	TDC	Cd(AA), Pb(GFA), Cu, Zn	Ni by AA	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/hio	Bacteria Bottle as is
S1809	Effluent #1	WW	7/7-8/19	0800-0800	X			X	X	X	X	X	X	X	1						1	1	1				
S1810	Reedy Meadow Brook #1	D	7/8/19	0730	X	X		X	X			X	X	X	1						1	1	1				
S1811	Effgrab #1	WW	7/8/19	0800		X	X														1						
S1812	SRCF lab water		7/5/19	0946	X	X		X	X			X	X	X	1						1	1	1				

Relinquished by:	Accepted by:	Date:	Time:
		7-8-19	1445
		7-8-19	520

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ MWRA eSMART ☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

PHOENIX
Environmental Laboratories, Inc.

Friday, July 12, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCD53838
Sample ID#s: CD53838 - CD53840

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 12, 2019

SDG I.D.: GCD53838

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFFLUENT 2 C39-2583	CD53838	WASTE WATER
REEDY MEADOW BANK 2 C39-2584	CD53839	WATER
EFF GRAB 2	CD53840	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/10/19	8:00
Location Code:	NEB	Received by:	B	07/10/19	16:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD53838
Phoenix ID: CD53838

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT 2 C39-2583

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.06	0.05	mg/L	1	07/12/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		07/10/19	7:00
Location Code:	NEB	Received by:	B	07/10/19	16:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD53838
Phoenix ID: CD53839

Project ID: PATRIOT BEVERAGES
Client ID: REEDY MEADOW BANK 2 C39-2584

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.27	0.05	mg/L	1	07/12/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 12, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/10/19	8:00
Location Code:	NEB	Received by:	B	07/10/19	16:52
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD53838
Phoenix ID: CD53840

Project ID: PATRIOT BEVERAGES
Client ID: EFF GRAB 2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.02	0.02	mg/L	1	07/10/19 19:44	O	SM4500CLG-97
pH	8.65	1.00	pH Units	1	07/11/19 04:37	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 12, 2019
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 12, 2019

QA/QC Data

SDG I.D.: GCD53838

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 487161 (pH), QC Sample No: CD53690 (CD53840)													
pH			7.52	7.57	0.70	98.7						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 487246 (mg/L), QC Sample No: CD53822 (CD53838, CD53839)													
Ammonia as Nitrogen	BRL	0.05	8.44	8.12	3.90	100			106			90 - 110	20
QA/QC Batch 487098 (mg/L), QC Sample No: CD53835 (CD53840)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	110							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
July 12, 2019

Friday, July 12, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCD53838 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

July 12, 2019

SDG I.D.: GCD53838

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Cooler: Yes ☒ No ☐
Coolant: IPK ☐ ICE ☒ No ☐
Temp 2.0 °C Pg of

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☒ Email: Kimberly.Wills@gza.com

Customer: NEB - a Div. of GZA
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O: 22508

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request: Ammonia pH, TRC

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia	pH	TRC	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
53838	Effluent-2 (CH-2583)	WW	7/9-7/10/19	0800-0800	X									1					
53839	Reedy Meadow Brook-2	D	7/10/19	0700	X									1					
53840	Eff grab-2 (CH-2584)	WW	7/10/19	0800		X						1							

Relinquished by:	Accepted by:	Date:	Time:
		7-10-19	1625
		7-10-19	1652

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ MWRA eSMART ☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

PHOENIX
Environmental Laboratories, Inc.

Wednesday, July 17, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCD56253
Sample ID#s: CD56253 - CD56255

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 17, 2019

SDG I.D.: GCD56253

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFFLUENT-3 C39-2645	CD56253	WASTE WATER
RECEIVING WATER-3 C39-2646	CD56254	SURFACE WATER
EFFLUENT GRAB 3	CD56255	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 17, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/12/19	7:00
Location Code:	NEB	Received by:	CP	07/12/19	16:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD56253
Phoenix ID: CD56253

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT-3 C39-2645

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	2.67	0.05	mg/L	1	07/16/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 17, 2019
Reviewed and Released by: Helen Geoghegan, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 17, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:		07/12/19	8:00
Location Code:	NEB	Received by:	CP	07/12/19	16:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD56253
Phoenix ID: CD56254

Project ID: PATRIOT BEVERAGES
Client ID: RECEIVING WATER-3 C39-2646

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.12	0.05	mg/L	1	07/16/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 17, 2019
Reviewed and Released by: Helen Geoghegan, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 17, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		07/12/19	7:00
Location Code:	NEB	Received by:	CP	07/12/19	16:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22508				

Laboratory Data

SDG ID: GCD56253
Phoenix ID: CD56255

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB 3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.04	0.02	mg/L	1	07/12/19 19:00	O	SM4500CLG-97
pH	8.39	1.00	pH Units	1	07/13/19 02:52	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
July 17, 2019
Reviewed and Released by: Helen Geoghegan, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 17, 2019

QA/QC Data

SDG I.D.: GCD56253

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 487543 (pH), QC Sample No: CD55810 (CD56255)													
pH			7.55	7.59	0.50	99.5						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 487707 (mg/L), QC Sample No: CD55917 (CD56253, CD56254)													
Ammonia as Nitrogen	BRL	0.05	<0.05	<0.05	NC	102			97.0			90 - 110	20
QA/QC Batch 487499 (mg/L), QC Sample No: CD55691 (CD56255)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	102							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller

Phyllis Shiller, Laboratory Director
July 17, 2019

Wednesday, July 17, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCD56253 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

July 17, 2019 SDG I.D.: GCD56253

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 24 Pg of

Data Delivery (check one):
☐ Fax #:
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22508
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature _____ Date _____

Matrix Code:
DW=drinking water **WW**=wastewater **S**=soil/solid **O**=other
GW=groundwater **SL**=sludge **A**=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (–)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
56253	Effluent-3 C39-2645	WW	7/11-12/19	0700 0700	X								1				
56254	Receiving Water-3 C39-2646	O	7/12/19	0800	X								1				
56255	Effluent Grab - 3	WW	7/12/19	0700		X	X			1							

Relinquished by:	Accepted by:	Date:	Time:
		7-12-19	1600
	Krystal Hall	7-12-19	16:30

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

SAMPLE RECEIPT CHEMISTRY
&
CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 05.0044697.00

DATE RECEIVED	7/8/19		7/10/19		7/12/19	
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3
COC #	C39-2529	C39-2530	C39-2583	C39-2584	C39-2645	C39-2646
pH (SU)	8.2	7.3	8.4	6.9	8.6	7.4
Temperature (^{o}C)	5.9	4.8	2.4	3.0	5.1	4.3
Dissolved Oxygen (mg/L)	9.4	6.4	10.2	7.1	9.0	10.0
Conductivity (µmhos)	2,316	339	2,368	308	2,356	291
Salinity (ppt)	1	<1	1	<1	1	< 1
TRC - DPD (mg/L)	0.029	0.45	0.26	0.25	0.28	0.30
TRC - Amperometric (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A
Hardness (mg/L as $CaCO_3$)	102	70	90	60	96	52
Alkalinity (mg/l as $CaCO_3$)	970	55	970	55	960	45
Tech Initials	KO	KO	CH	CH	CW	CW

NOTE: NA = NOT APPLICABLE

Data Reviewed By: _____ Date Reviewed: 8/12/19

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #1

EFFLUENT

Sampler: Jim Drapeau
Title: Chief Oper. WW
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: EFFLUENT
Start Date: 7/9/19 0800 Time: 7/8/19 0700
End Date: 7/7/19 Time: 7/8/19

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 7/8/19
Time Collected: 0800

Sample Type:
___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau
Title: Chief Oper. WW
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 7/8/19
Time Collected: 0730

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 7/8/19	Time: 0950
Received By:	Date: 7-8-19	Time: 0950
Relinquished By:	Date: 7-8-19	Time: 1335
Received By:	Date: 7/8/19	Time: 1335

Optional Information

Purchase Order # to reference on invoice:

Received
ON ICE

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 5.9 °C
Temperature of Receiving Water Upon Receipt at Lab: 4.8 °C

Effluent COC# C39-2529
Receiving Water COC# C39-2530

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #2

EFFLUENT

Sampler: Jim Dapper

Title: Chief Op WWTP

Facility: Patriot Beverages

RECEIVING WATER

Sampler: Jim Dapper

Title: Chief Op WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: EFFLUENT

Start Date: 7/9/19 Time: 0800

End Date: 7/10/19 Time: 0800

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 7/10/19

Time Collected: 0720

* Cubitainer said 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 7/10/19

Time Collected: 0800

Sample Type:

_____ Prechlorinated

_____ Dechlorinated

X Unchlorinated

_____ Chlorinated

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 7/10/19	Time: 0937
Received By:	Date: 7/10/19	Time: 0937
Relinquished By:	Date: 7/10/19	Time: 1300
Received By:	Date: 7/10/19	Time: 1300

Optional Information

Purchase Order # to reference on invoice: _____

Received
ON ICE

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 2.4 °C

Temperature of Receiving Water Upon Receipt at Lab: 3.0 °C

Effluent COC# C39-2583

Receiving Water COC# C39-2584

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #3

EFFLUENT

Sampler: Jim Drapeau
Title: Chief Oper WWTP
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: EFFLUENT
Start Date: 7/11/19 Time: 0700
End Date: 7/12/19 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 7/12/19
Time Collected: 0700

Sample Type:
____ Prechlorinated
____ Dechlorinated
X Unchlorinated
____ Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau
Title: Chief Oper WWTP
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 7/12/19
Time Collected: 0800

Received
ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 7/12/19	Time: 10:25
Received By:	Date: 7/12/19	Time: 10:25
Relinquished By:	Date: 7/12/19	Time: 2:55
Received By:	Date: 7/12/19	Time: 1455

Optional Information

Purchase Order # to reference on invoice:

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 5.1 °C
Effluent COC# C39-2645

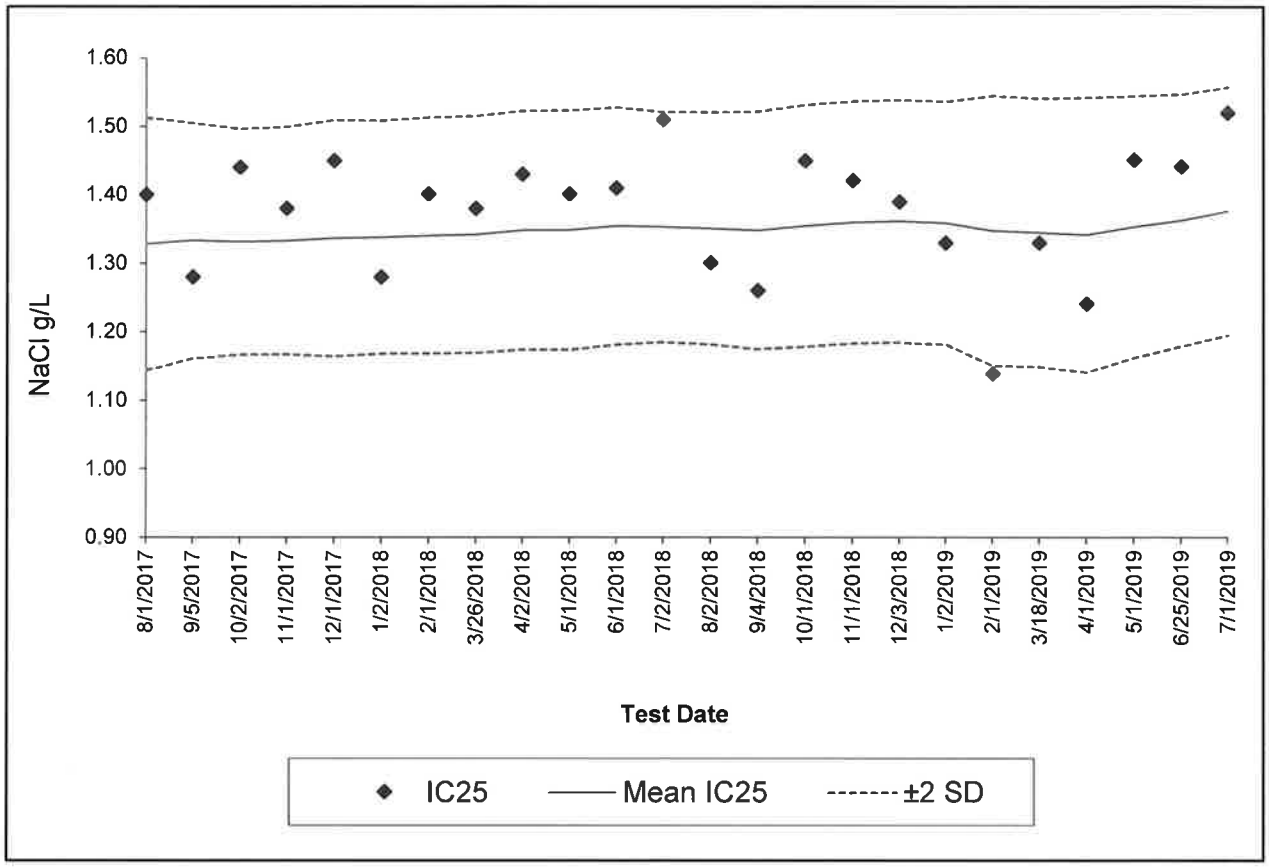
Temperature of Receiving Water Upon Receipt at Lab: 4.3 °C
Receiving Water COC# C39-2646

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

REFERENCE TOXICANT CHARTS

New England Bioassay

Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC_{25}



Test ID	Date	IC_{25}	Mean IC_{25}	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1.33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1.17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1.36	0.09	1.18	1.54	0.07	8.91	11.06
19-178	2/1/2019	1.14	1.35	0.10	1.15	1.54	0.07	6.84	10.94
19-376	3/18/2019	1.33	1.35	0.10	1.15	1.54	0.07	15.36	10.73
19-404	4/1/2019	1.24	1.34	0.10	1.14	1.54	0.07	7.57	10.73
19-541	5/1/2019	1.45	1.35	0.10	1.16	1.54	0.07	7.92	10.62
19-823	6/25/2019	1.44	1.36	0.09	1.18	1.55	0.07	10.75	10.76
19-927	7/1/2019	1.52	1.38	0.09	1.20	1.56	0.07	14.21	10.91

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45
PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%